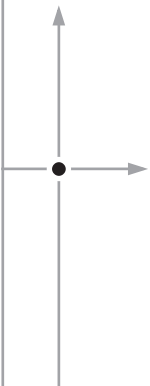


# CameraMan

JSC-2200 SHOT DIRECTOR

## Installation and Operation Manual



071-8481-00  
JANUARY 2006

*the most watched worldwide*

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## Grass Valley Web Site

The [www.thomsongrassvalley.com](http://www.thomsongrassvalley.com) web site offers the following:

**Online User Documentation** — Current versions of product catalogs, brochures, data sheets, ordering guides, planning guides, manuals, and release notes in .pdf format can be downloaded.

**FAQ Database** — Solutions to problems and troubleshooting efforts can be found by searching our Frequently Asked Questions (FAQ) database.

**Software Downloads** — Software updates, drivers, and patches can be downloaded.

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# *About this Manual*

The JSC-2200 SHOT Director is the key to ultimate camera control. It is designed for use with the CameraMan 3012 3e Digital Camera. Use this manual along with the CameraMan 3012 3e Camera Installation and Operation Manual.

**Note** The JSC-2200 SHOT Director is compatible with:  
CameraMan 3012 3e Cameras

To verify the Camera software version number, using the instructions in the Camera Installation and Operation Manual, remove the ROM card. The revision number is located on the label of each chip. If you have any questions, please contact Customer Support.

This manual covers the connection, configuration, and operation of the JSC-2200 SHOT Director, which combines robotic camera control with proven autoTRACK capabilities (in autoTRACK models), location presets, and virtual CCU control for up to 16 separate cameras—all in one control unit.

The JSC-2200 SHOT Director can store and recall:

- Up to 125 presets
- Up to 15 autoTRACK views per camera.

The JSC-2200 SHOT Director also offers variable speed pan/tilt and zoom using two slider adjustments for precise, smooth camera control. Its powerful backlit LCD display enables:

- Adjustment of tracking views, attainment of camera movement read-outs
- Adjustment of each camera's CCU settings on-the-fly without compromising the video.

For questions regarding the installation or operation of the CameraMan 3012 3e Cameras, please refer to the installation and operation manual included with the camera.

The JSC-2200 SHOT Director includes:

- One JSC-2200 SHOT Director
- One JSC-2200 SHOT Director Power Supply
- One 25 ft. (7.6 m) CameraMan Communication Cable

# General Information

## JSC-2200 SHOT Director

The JSC-220 SHOT Director (Figure 1) is a unique, multi-camera control device combining pan/tilt, CCU, and autoTrack control.

Figure 1. JSC-2200 SHOT Director



Following are important safety instructions and information related to the installation and use of this equipment.

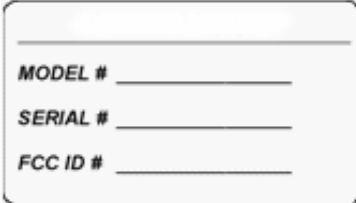
## Safety Instructions

- Do not use this apparatus near water.
- Clean only with a damp cloth.
- Do not defeat the safety purpose of the polarized or grounding-type plug. If the provided plug does not fit into your power source, consult an electrician for replacement of the obsolete outlet.
- Unplug this apparatus during lightning storms or when unused for long periods.
- Have all servicing performed by authorized, qualified service personnel only.

## Important Identification Numbers

Before starting to assemble and use the JSC-2200 SHOT Director, please take a moment to find the Model and Serial number tag ([Figure 2](#)) on the unit and complete the following information.

Figure 2. Model and Serial Number Tag



A rectangular tag with a light gray background and a thin black border. It contains three lines of text, each followed by a horizontal line for writing:

- MODEL # \_\_\_\_\_
- SERIAL # \_\_\_\_\_
- FCC ID # \_\_\_\_\_

## Power and Connection Accessories

- CameraMan Communication Cable, 25 ft. (7.62 m)
- Universal Power Supply: 100/240 V ac, 50/60 Hz, 2.5 A, 20 V dc.



# *Knobs, Buttons, and Slide Controls*

Notice that the top of the JSC-2200 SHOT Director is divided into four sections: the knobs (left), the buttons (lower middle), the slide controls and joystick (right), and the LCD display (upper-middle).

## **Knobs**

Knob controls ([Figure 3](#)):

- Focus Control – For manual adjustment of the lens focal point and to adjust the values on the settings menus.
- Power Switch – Turns the JSC-2200 SHOT Director on and off. The power LED illuminates when power is ON.
- Auto Iris – When active, the JSC-2200 SHOT Director automatically adjusts the camera IRIS and GAIN to maintain a constant video level. The AUTO IRIS LED illuminates when AUTO IRIS is active. This AUTO IRIS button also disables AUTO IRIS.
- Manual Iris – For manual adjustment of the camera IRIS to brighten and darken the video picture. AUTO IRIS must be disabled for the MANUAL IRIS knob to function.

*Figure 3. Knob Controls*



## Buttons

System Control Buttons (Figure 4) provide navigation through the various LCD displays.

Figure 4. System Control Buttons



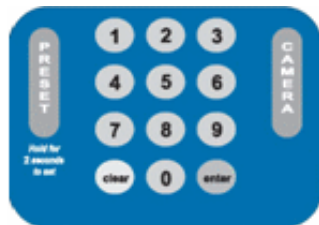
- HOME – Displays the CAMERA CONTROL HOME MENU.
- MENU – Not Used
- SETUP – Displays menus for adjusting the Camera, Pan/Tilt Unit, JSC-2200 SHOT Director, autoTRACK, and network settings.
- BACK – Displays the last menu viewed.
- CAMERA QUICK SELECT buttons – correspond to the DIGITAL camera numbers appearing on the bottom of the lower part of the CAMERA CONTROL HOME MENU.
- autoTRACK Control Buttons (Figure 5) – When autoTRACK is activated, these buttons are used to store and recall the five preset autoTRACK Views: Left, Tight, Mid, Wide, and Right.

Figure 5. autoTRACK Control Buttons



- Keypad Control Buttons (Figure 6) – Used to store and recall location presets and Views, select between cameras in a multi-camera network, and enter/clear information found on the LCD display.

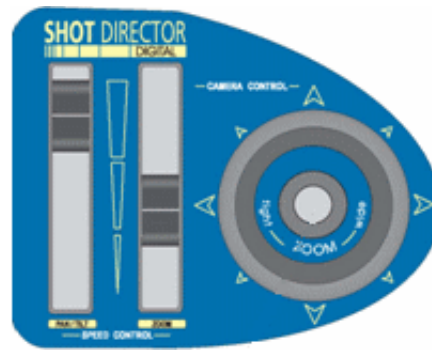
Figure 6. Keypad Control Buttons



## Slide Controls and Joystick

Slide Controls and Joystick (Figure 7):

Figure 7. Slide Controls and Joystick



- Speed Control Slides – For manual maximum speed adjustment of the of the camera’s pan and tilt motions and zoom capabilities. When the slide control is at the down limit, the control is OFF.
- Joystick (X–Y Control) – For manual control of the camera pan/tilt motion. This control is speed proportional.
- Joystick (Rotational Control) – For manual zoom in (clockwise for tighter views) and zoom out (counter-clockwise for wider views). This control is speed proportional.
- autoTRACK button – Activates autoTRACK (when used in combination with the ENTER button)
- The joystick is also used to navigate through the LCD display screens.



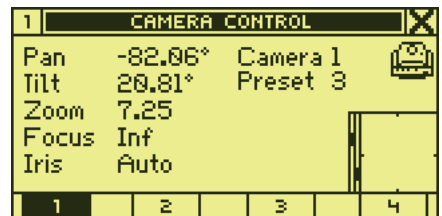
# LCD Display, Jacks, and Ports

The knobs, buttons, and slide controls are used in conjunction with the display screen at the top of the JSC-2200 SHOT Director. The jacks and ports on the back of the JSC-2200 SHOT Director are used to communicate with the CameraMan network.

## LCD Display

- CAMERA CONTROL HOME MENU (Figure 8) – shows the values associated with the currently controlled camera.

Figure 8. Camera Control Home Menu

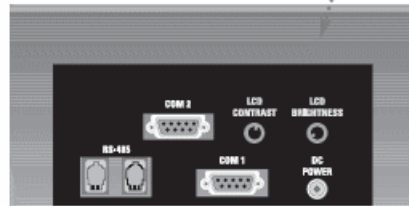


- CAMERA QUICK SELECT – provides easy JSC-2200 SHOT Director camera control selection.
- CONTROL WINDOW with SLIDER INDICATOR – an on-screen visual of the joystick control. The slider indicator (left side of the CONTROL WINDOW) indicates proper calibration. If missing, the calibration must be performed again.

## Jacks and Ports



- **LCD Contrast Knob** - Used to increase and decrease the contrast on the SHOT Director's LCD Display.
- **LCD Brightness Knob** - Used to increase and decrease the intensity of the LCD Display.



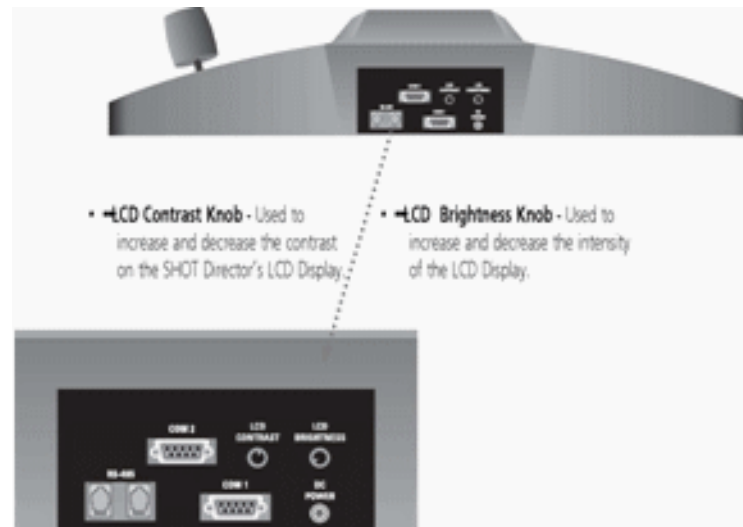
- **RS-485 Ports** - Used for communications with CameraMan 3-CCD cameras.
- **RS-232 Jack (COM 2)**- Used to communicate with PVTV STUDIO.
- **18-20 VDC =====** Used to supply power to the SHOT Director.
- **RS-232 Jack (COM 1)=====** Used to connect to a PC (ie. to download DIGITAL SHOT Director software).

# Connecting To the CameraMan Network

To connect the JSC-2200 SHOT Director to the CameraMan network:

1. Position the JSC-2200 SHOT Director on a flat surface. Leave enough space around the unit so all controls can be accessed easily.
2. Install the CameraMan Power Supply by connecting the DC Plug into the JSC-2200 SHOT Director port labeled 18-20 VDC ([Figure 9](#)) and connecting the other end into a standard ac wall outlet.

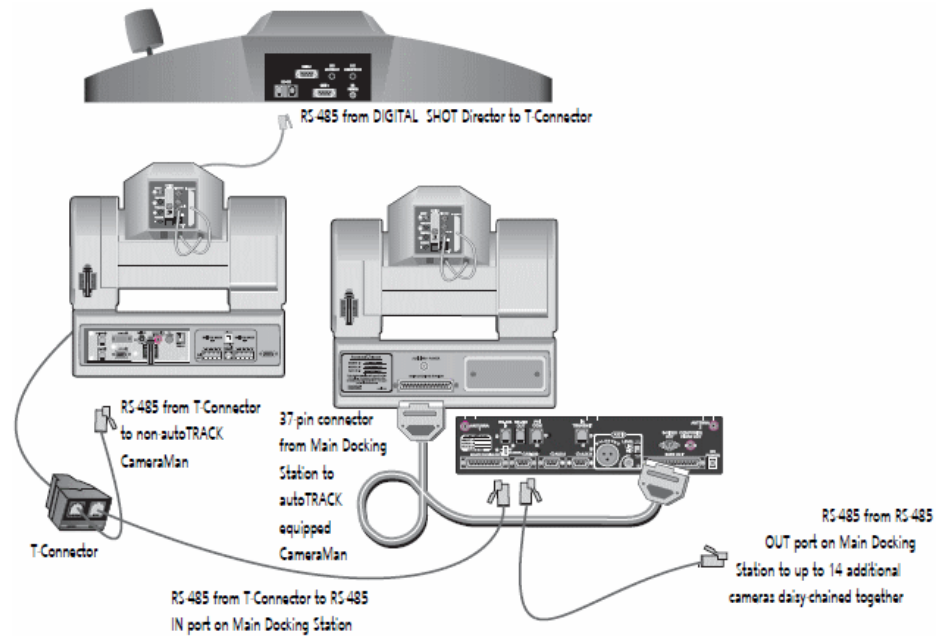
Figure 9. SHOT Director Connectors



3. Using the supplied cable, connect the JSC-2200 SHOT Director RS-485 port ([Figure 9](#)) to the RS-485 port of either the CameraMan or Main Docking Station.

**Note** Multiple cameras require daisy-chain wiring ([Figure 10](#))

Figure 10. Daisy-chain Wiring Reference



**Note** Using any other wiring configuration may cause damage.

**Note** For more information on multiple camera applications, refer to the CameraMan 3012 3e Camera Installation and Operations Manual



# Power Up

To power up the JSC-2200 SHOT Director and CameraMan network:

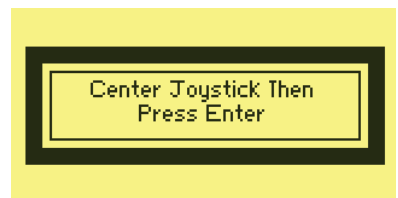
1. power up the cameras and devices in the network
2. press POWER on the JSC-2200 SHOT Director. The power light will illuminate.

**Note** The very first time the JSC-2200 SHOT Director powers on, the calibration menus appear. After the initial calibration, every time the JSC-2200 SHOT Director powers up, the CAMERA CONTROL HOME MENU appears.

## Joystick Calibration

If the joystick is not calibrated, the calibration screen appears immediately after boot-up. When the joystick enters calibration mode, Screen 1 appears ([Figure 11](#)).

Figure 11. Joystick Calibration - Screen 1

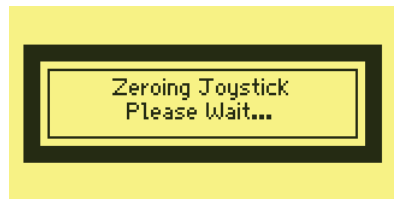


**Note** If necessary, adjust the LCD CONTRAST and LCD BACKLIGHT on the rear panel of the JSC-2200 SHOT Director to obtain the best LCD clarity.

1. Ensure that the joystick is in the center position, then press ENTER. Screen 2 ([Figure 12](#)) appears for approximately 5 seconds.

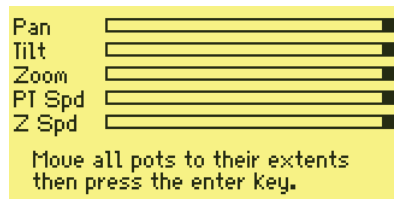
**CAUTION** When Screen 2 appears, Do Not touch the Joystick. Screen 2 displays approximately 5 seconds.

Figure 12. Joystick Calibration - Screen 2



2. When the zero calibration process finishes, Screen 3 (Figure 13) appears.

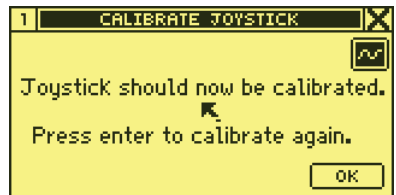
Figure 13. Joystick Calibration - Screen 3



3. Move the joystick control and the sliders to their extreme positions so the JSC-2200 SHOT Director can record minimum and maximum levels. When finished, press ENTER, screen 4 (Figure 14) appears.

**Note** In the following step, before selecting OK, make sure the mouse pointer (controlled with the joystick) is able to reach all four corners of the screen.

Figure 14. Joystick Calibration - Screen 4



4. Press ENTER to repeat the calibration process  
Select OK to complete the calibration.

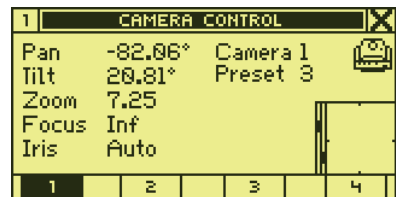
**Note** If manual calibration is needed (see troubleshooting section), press and hold SETUP on the keypad while powering ON the JSC-2200 SHOT Director.

**Note** For more information on powering up other devices in the CameraMan network, see the operation manual that came with the device.

# Camera Control Home Menu

Press HOME to access the CAMERA CONTROL HOME MENU (Figure 15).

Figure 15. Camera Control Home Screen



Display Indicators:

- PAN: Indicates horizontal plane rotation relative to the camera 0 point (the arrow indicated on the bottom of the camera).
- TILT: Indicates the vertical plane rotation relative to horizontal (0.0 degrees).
- ZOOM: Indicates the value of zoom setting.
- FOCUS: Indicates the value of the focus setting.
- IRIS: Indicates the value of the iris setting or AUTO when AUTO IRIS is enabled.
- CAMERA: Indicates the active camera for JSC-2200 SHOT Director control (also shown in upper-left corner of LCD). The controlled camera can be changed by using the CAMERA QUICK SELECT buttons that correspond to the camera numbers across the bottom of the screen. A specific camera can also be selected by pressing CAMERA, then the camera #, then ENTER/OK on the keypad.
- PRESET: Indicates the last camera preset selected.
- CONTROL WINDOW (bottom right corner): Shows the absolute position of the joystick and speed controls.



# CameraMan and JSC-2200 SHOT Director Setup

SETUP menus provide configuration information for both the JSC-2200 SHOT Director and each camera in the network.

**Note** Before setting up the JSC-2200 SHOT Director, the system must first be powered up and the joystick calibrated.

## Setting Up Multiple-Camera Systems

1. Set the BASE UNIT ADDRESS for each camera in your network. The JSC-2200 SHOT Director automatically numbers the CameraMan cameras in the network from 1 to 16. These numbers correspond to addresses 0–F on the CameraMan base unit. Therefore, set the base unit address of the cameras as follows:

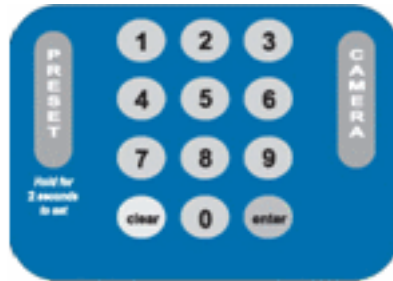
Table 1.

Camera Number:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Camera Base Unit Address	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

**Note** For details on changing the CameraMan 3012 3e camera base unit address, see the CameraMan 3012 3e Camera Installation and Operation Manual.

2. Use the JSC-2200 SHOT Director keypad ([Figure 16](#)) to select a camera for configuration.

Figure 16. SHOT Director Keypad



- Press CAMERA. This opens the CAMERA CONTROL dialog box (Figure 17).

Figure 17. Camera Control Dialog Box



- Either press the camera number to be configured or use the FOCUS knob to scroll through the available camera numbers.
  - Either press ENTER on the keypad or use the mouse to select OK.
  - Verify that the HOME menu indicates the selected camera.
3. Repeat steps 1-2 to set up each camera.

## Camera Location Presets

Location Presets enables quick positioning and adjustment for the view of any camera on the network. Using the JSC-2200 SHOT Director numeric keypad and camera control features, the pan/tilt position, zoom perspective, iris, and focus setting for each Location Preset is stored and recalled. Up to 125 presets can be stored for each of up to 16 cameras in the network.

To store a Location Preset:

1. Select the desired camera.
2. Adjust the camera for the desired Pan, Tilt, Zoom, Focus, and Iris settings.
3. Key in the number of the preset location desired (Figure 18) or use the FOCUS knob to scroll the list.

Figure 18. Camera Control Preset



4. Either use the mouse pointer to select STORE or press ENTER.

**Note** A Preset can also be stored by entering the PRESET number on the keypad and then holding the PRESET button for 3 seconds. If sound is enabled, the JSC-2200 SHOT Director beeps when the Preset is successfully stored.

To recall a location preset:

1. Key in the desired preset number.
2. Press and release the PRESET button.





# System Setup Menus

## Overview

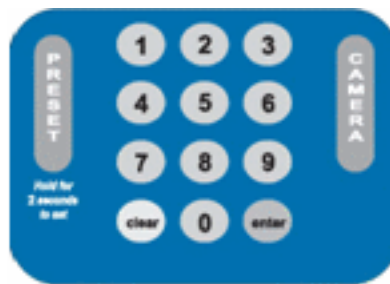
SETUP menus provide configuration information to define the Camera, JSC-2200 SHOT Director, Pan/Tilt Unit, autoTRACK, and Network settings. The main SYSTEM SETUP menu is the first step to accessing any and all of the areas mentioned above. Follow the steps on the following pages to navigate through the different SETUP menus.

### autoTRACK Mode

**Note** To use autoTRACK presets, a camera must be selected and the JSC-2200 SHOT Director must be in autoTRACK Mode.

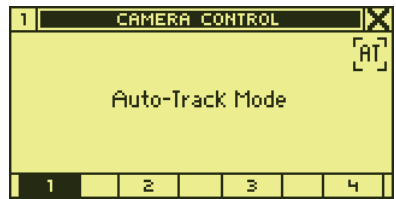
To access autoTRACK Mode, simultaneously press and hold ENTER on the keypad ([Figure 19](#)) and press the autoTRACK button on the top of the joystick.

Figure 19. Keypad Control Buttons



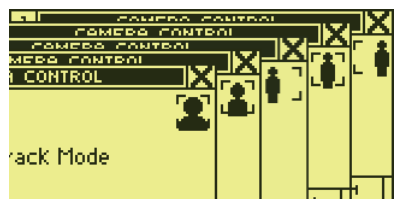
The Camera Control Auto-Track Mode Screen appears ([Figure 20](#)).

Figure 20. Camera Control Auto-Track Screen



- The icon in the upper-right corner of the screen (Figure 21) indicates the currently selected autoTRACK preset. This icon will not restore after a camera switch.

Figure 21. autoTrack Icons



- With the exception of Zoom, Focus, and Iris, camera controls are disabled in autoTRACK mode.
- To deactivate autoTRACK mode, press the autoTRACK button on the top of the joystick.

## System Setup

When the System Control Setup button (Figure 22) is pressed, the initial setup menu appears (Figure 23).

Figure 22. System Control Buttons



Figure 23. System Setup Menu



- CAMERA: Used to access the camera menus.
- PAN/TILT UNIT: Used to access the pan/tilt menus.
- SHOT DIRECTOR: Used to access the JSC-2200 SHOT Director menus.
- AUTO-TRACK: Used to access the autoTRACK menus.
- NETWORK: Used to access the Network (camera polling) menus.
- ABOUT: Gives information about the JSC-2200 SHOT Director software, copyright.
- DIAG: Shows raw input values to the embedded micro-controller in the joystick.

## Camera Settings Menus

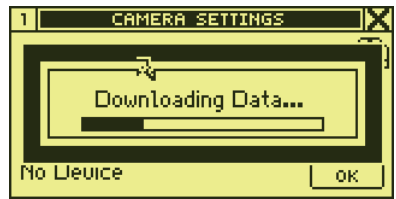
When CAMERA is selected on the SYSTEM SETUP screen, the CAMERA SETTINGS screen appears. From that screen it is possible to navigate through and change camera settings and select default values.

### Downloading Camera Data

Either when accessing the CAMERA SETTINGS menu by selecting CAMERA on the SYSTEM SETUP screen or when the controlled camera changes while on the CAMERA SETTINGS page, the JSC-2200 SHOT Director takes a few seconds to download the selected camera settings. During this download time, a DOWNLOADING DATA message appears if there is no camera connected or if a break in Camera-to-SHOT Director communication occurs. When a COMMUNICATION ERROR occurs, the camera in the upper-right corner of LCD menu continually flashes.

**Note** Use the DNLD button, found on the CAMERA SETTINGS page, to download the current camera settings.

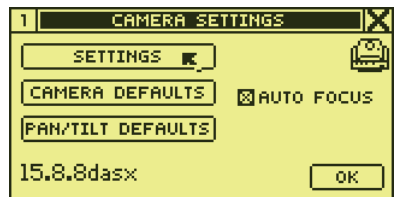
Figure 24. Camera Settings Downloading Data Message



## Camera Settings Menu

To access the CAMERA SETTINGS menu (Figure 25), select CAMERA on the SYSTEM SETUP screen.

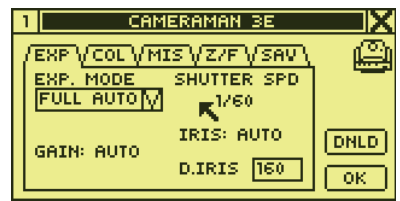
Figure 25. Camera Settings Menu



- **SETTINGS:** Accesses the gain, iris, shutter, and color settings values that can be adjusted.
- **CAMERA DEFAULTS:** Sets camera default values.
- **AUTO FOCUS:** Toggle Focus Mode (Auto/Manual)

After selecting SETTINGS from the CAMERA SETTINGS main screen, the Camera Settings Tab screen (Figure 26) appears. Selecting a tab provides access to related camera control settings.

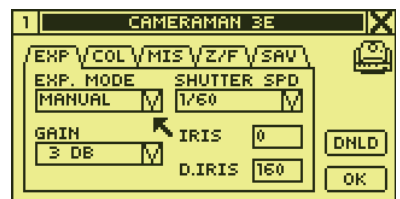
Figure 26. CameraMan 3e Settings Tab Screen



- EXP: Camera EXPOSURE settings
- COL: Camera COLOR settings.
- MIS: Miscellaneous settings including PICTURE EFFECT, WIDE MODE, and DISPLAY ON/OFF.
- Z/F: ZOOM POSITION and DIGITAL ZOOM MODE, FOCUS POSITION and FOCUS MODE (Auto/Manual) settings.
- SAV: SCENE and POWER-ON DEFALT PRESETS.

TAB 1: EXP - Camera Exposure settings (Figure 27)

Figure 27. CameraMan 3e Exposure Tab



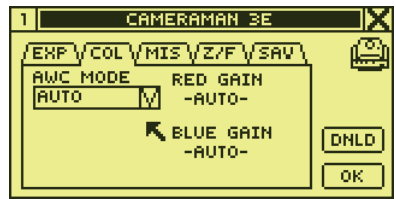
- EXP. MODE: Drop-down box for Camera Exposure Mode
- GAIN: Drop-down box for camera GAIN settings.
- SHUTTER SPD: Drop-down box for camera shutter speed settings.
- IRIS: Records the iris position.
- D.IRIS: Records the iris position to be used when toggling from auto to manual iris control.

**Note** SHUTTER SPD, IRIS, and GAIN controls are available only when EXP. MODE is set to MANUAL.

TAB 2: COL – Camera Color settings (Figure 28)

- AWC MODE: Set Auto White Control Mode.

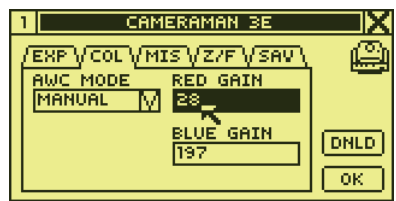
Figure 28. CameraMan 3e Color Tab - AWC



**Note** RED GAIN and BLUE GAIN settings are available only when AWC MODE is set to MANUAL

- RED GAIN: Records camera red gain setting (Figure 29).

Figure 29. CameraMan 3e Color Tab - RED/BLUE GAIN

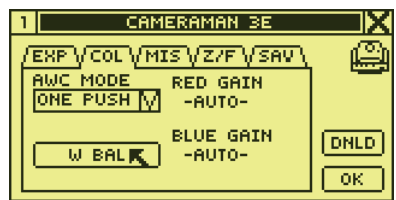


- BLUE GAIN: Records camera blue gain setting (Figure 29).

**Note** W BAL button is available only when AWC MODE is set to “One Push”

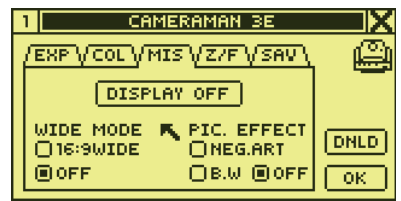
- W BAL: Auto White Balance (Figure 30).

Figure 30. CameraMan 3e COL (Color) Tab - W BAL



TAB 3: MIS - Miscellaneous settings (Figure 31)

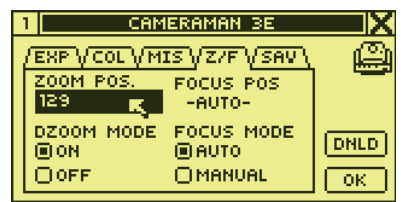
Figure 31. CameraMan 3e MIS (Miscellaneous) Tab



- DISPLAY ON: Toggles the camera on-screen display either on or off.
- WIDE MODE: Sets camera in 16:9 wide mode.
- PIC. EFFECT: Set camera in Black & White and Negative Art.

TAB 4: Z/F - Zoom and Focus Settings (Figure 32).

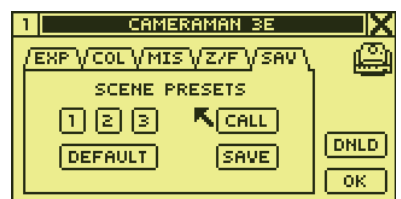
Figure 32. CameraMan 3e Z/F (Zoom/Focus) Tab



- ZOOM POS. Records current zoom position.
- DZOOM MODE: Toggle digital zoom on and off.
- FOCUS POS: Records current focus position.
- FOCUS MODE: Toggle focus mode from auto to manual.

TAB 5: - SAV- Save and Call camera settings presets (Figure 33).

Figure 33. CameraMan 3e SAV (Save) Tab



- 1 Scene preset #1.
- 2 Scene preset #2.
- 3 Scene preset #3.
- DEFAULT: Power On default.
- CALL: Recall presets or default
- SAVE: Save current settings as a preset or Power On default.

**Note** The Camera On-Screen Menu (Figure 34) is only available for a Broadcast camera.

Figure 34. Broadcast Cam Only! Tab



## Pan/Tilt Unit Settings Menus

When either CAMERA DEFAULTS or PAN/TILT DEFAULTS is selected from the CAMERA SETTINGS page, a confirmation dialog box appears (Figure 35). Using the mouse, select YES to set the default values.

Figure 35. Default Confirmation Dialog Box



## System Setup and the Pan/Tilt Unit

To access the PAN/TILT UNIT settings menu, select PAN/TILT UNIT on the SYSTEM SETUP screen (Figure 36).

Figure 36. System Setup Screen



## Camera Defaults and Pan/Tilt Defaults Menus

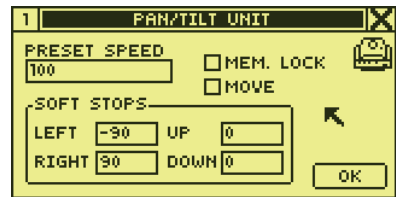
To access the PAN/TILT UNIT settings menu, select PAN/TILT UNIT on the SYSTEM SETUP screen (Figure 36).



## Pan/Tilt Unit Settings Menu

The Pan/Tilt Unit Settings menu (Figure 37) enables setting pan and tilt limits for the camera. Use it to preview and set the speed and degree of soft stops.

Figure 37. Pan/Tilt Unit Settings Menu



The numbers in the lower-left of the screen indicate the current camera limits.

Function Control Buttons:

1. Using the FOCUS knob, set the left, right, up, and down limit values for the soft stop.
2. Press MOVE button to preview the soft stop.
3. Select OK when finished.
4. Set PRESET SPEED. This determines the rate at which a camera will move to a recalled preset location.  
Range: LEFT: -175° / RIGHT: +175° / UP: -26° / DOWN: +26°

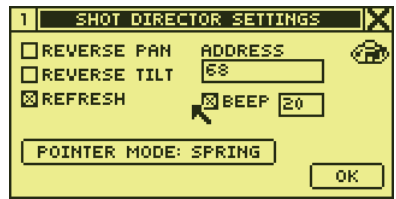
**Note** If MEM LOCK is enabled, camera and autoTRACK presets are not saved.

## JSC-2200 SHOT Director Settings Menus

### Setup SHOT Director Menus Display Path: **SETUP > SHOT Director**

The JSC-2200 SHOT Director Settings LCD menus enable adjustment of various JSC-2200 SHOT Director parameters. To access the SHOT Director Settings menu (Figure 38), select SHOT DIRECTOR on the SYSTEM SETUP screen.

Figure 38. SHOT Director Settings Menu

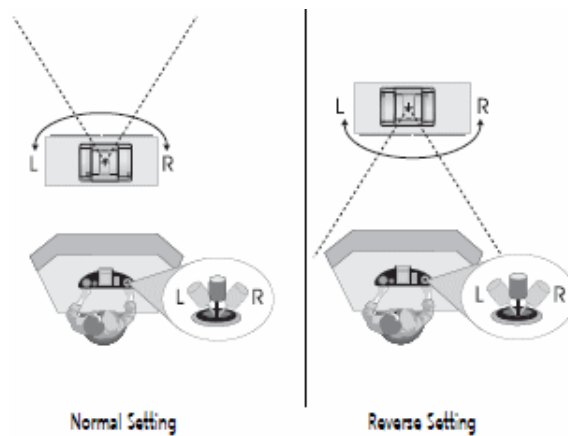


- REVERSE PAN: For the selected camera, reverses the actual camera pan direction from the joystick pan direction.
- REVERSE TILT: For the selected camera, reverses the actual camera tilt direction from the joystick tilt direction.
- REFRESH: For the selected camera, turns camera data refresh of/on for the selected camera.
- ADDRESS: Sets the JSC-2200 SHOT Director address. Address 68 should work for most situations.
- BEEP: Enables and disables the JSC-2200 SHOT Director audible beep. The numeric value adjusts beep pitch.
- POINTER MODE: Clicking Pointer Mode toggles between –
  - SPRING: The pointer tracks the position of the joystick exactly. This is the default pointer setting.
  - DRIFT: The pointer interprets the joystick position as speed and direction.

## Understanding the PAN Motion

In NORMAL mode, the camera PAN motion operates as if the operator is behind the CameraMan—looking at the subject. In this mode, the camera pans in the direction that the joystick moves. Refer to [Figure 39](#).

Figure 39. Pan Motion Example

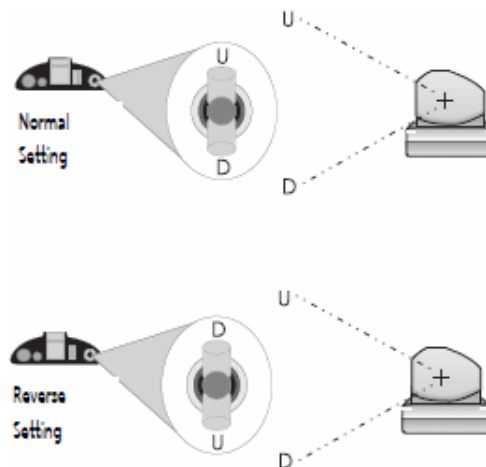


The REVERSE mode enables the operator to operate a camera as if facing toward them. In this mode, the camera pans in the opposite direction that the joystick moves.

## Understanding the TILT Motion

While the orientation of PAN motion is based more on the application need and the orientation of the controller to the camera, the TILT orientation is based more on the controller's preference. Refer to [Figure 40](#).

Figure 40. Tilt Motion Example



- In NORMAL mode, pushing forward on the joystick tilts the camera up.
- In REVERSE mode, pushing forward on the joystick tilts the camera down.

**Note** Try each of these settings to see which best fits your application and with which you are most comfortable.

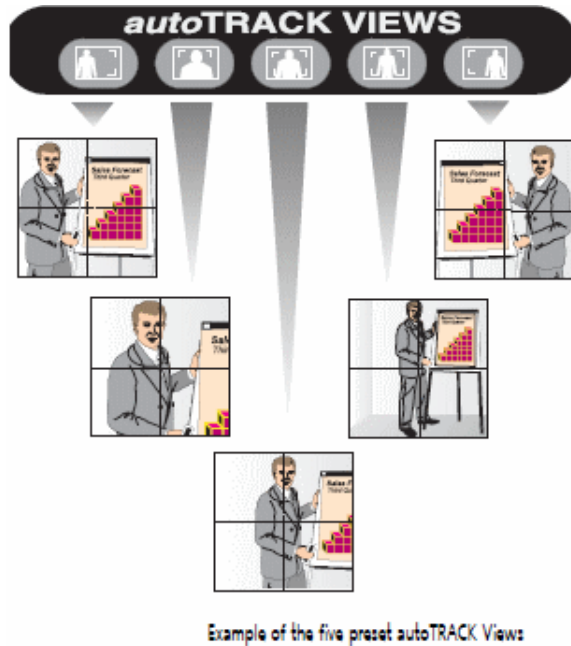
# autoTRACK Setup Menus

## autoTRACK Views

The JSC-2200 SHOT Director stores and recalls up to 10 autoTRACK views. Five basic preset views—left, tight, mid, wide, and right—are already programmed into the JSC-2200 SHOT Director. These are adjustable or new Custom Views can be created. Together with the basic preset views, a total of 15 autoTRACK views can be stored and recalled.

The five basic preset views (Figure 41) enable changing from a close headshot, using the TIGHT autoTRACK view button to emphasize facial expressions, to a full bodyshot using the WIDE autoTRACK view button. Presenters can also share the video screen with a flip chart or other key presentation areas using the LEFT or RIGHT autoTRACK View buttons. The MID autoTRACK view gives a medium-range shot.

Figure 41. Five Basic Preset Views Example



Each autoTRACK view stores and recalls changes in Window, Sensitivity, Subject Position, Zoom, Focus, and Iris. This enables customizing each autoTRACK view to suit personal needs.

## Setup autoTRACK Menu Display Path: **SETUP > Auto-Track**

The AUTO-TRACK setup menus store, recall, create, and edit various autoTRACK views and are accessed by selecting AUTO-TRACK on the SYSTEM SETUP screen (Figure 42). The values on the AUTO-TRACK SETUP (Figure 43) screen are adjusted using either the FOCUS knob for coarse adjustments or the MANUAL IRIS knob for tighter adjustments.

Figure 42. System Setup Screen

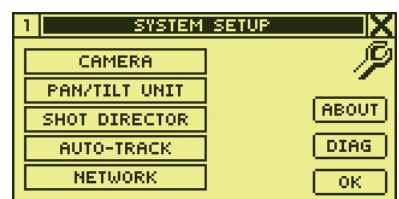
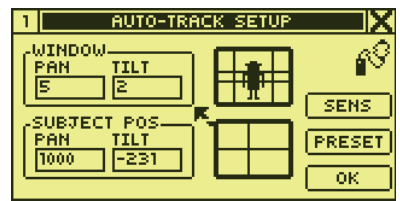


Figure 43. Auto-Track Setup Dialog Box



- PAN WINDOW: Adjusts the subject pan window (visual illustrates adjustment).
- TILT WINDOW: Adjusts the subject tilt window.
- PAN POSITION: Adjusts the subject pan offset position (visual illustrates adjustment).
- TILT POSITION: Adjusts the subject tilt offset position.
- SENS: Displays the TRACKING SENSITIVITY dialog box.
- PRESET: Displays the autoTRACK PRESET dialog box.

## autoTRACK Sensitivity Menu

Selecting SENS on the AUTO-TRACK SETUP MENU opens the SENSITIVITY dialog box (Figure 44). This adjusts the speed at which the DIGITAL CameraMan returns the presenter to the subject position setting.

Figure 44. Auto-Track Setup - Sensitivity Dialog Box



- Adjust sensitivity up or down using the FOCUS knob.
- Range: 10-120 in steps of 1 (10 = slow).

## autoTRACK Preset Menu

Selecting PRESET on the AUTO-TRACK SETUP MENU opens the autoTRACK PRESET dialog box (Figure 45). This stores and recalls autoTRACK views.

Figure 45. Auto-Track Setup - Preset Dialog Box



- Adjust pan and tilt values on the AUTO-TRACK SETUP screen.
- Select PRESET.
- Choose a number for the preset (1-10).
- Select STORE.

To adjust and store an autoTRACK view on one of the pre-programmed autoTRACK keypad buttons:

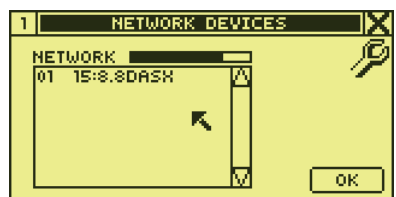
1. Set the autoTRACK view parameters using the AUTO-TRACK SETUP screen
2. Press the HOME button to return to the CAMERA CONTROL HOME menu
3. Press and hold the desired autoTRACK keypad button until the JSC-2200 SHOT Director beeps.

## Network Settings and other System Setup Menus

### Network Menu

The NETWORK DEVICES menu (Figure 46) appears when NETWORK is selected on the SYSTEM SETUP screen. This menu records and constantly updates the camera number and version of the cameras connected to the JSC-2200 SHOT Director. Cameras, in the CameraMan network, controlled by the JSC-2200 SHOT Director are listed in the NETWORK DEVICES menu. If no cameras are connected to the JSC-2200 SHOT Director, NO DEVICES is displayed.

Figure 46. Network Devices Menu



## About Menu

The ABOUT screen (Figure 47) is displayed when ABOUT is selected from the SYSTEM SETUP screen. This menu displays software version, copyright, and company information.

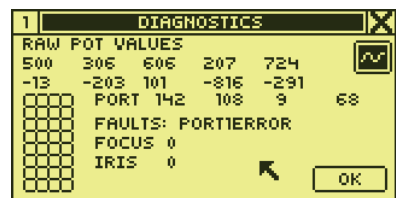
Figure 47. About Screen



## Diagnostics Menu

The DIAGNOSTICS menu (Figure 48) scrolls when DIAG is selected on the SYSTEM SETUP screen. This menu shows raw input values to the embedded micro-controller in the joystick. The raw pot values from left to right are ZOOM, TILT, PAN, ZOOM SPEED SLIDER, PAN/TILT SPEED SLIDER.

Figure 48. Diagnostics Menu



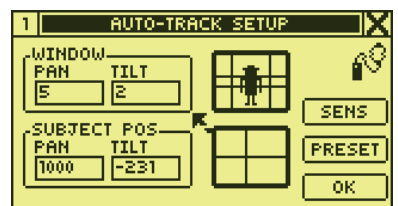
- 1st row of raw pot values are absolute ADC values.
- 2nd row of raw pot values are zeroed values offset from center. The first 3 values should be greater than -30 and less than 30 when the joystick is centered. If the values are outside this range, the joystick needs calibration.
- The grid in the lower left shows each key state.
- The values in the PORT row represent the number of bytes received and transmitted by the serial ports. (RX0, TX0, RX1, TX1).
- The FAULTS field displays any critical errors that might have occurred.





# Controlling Camera Movement

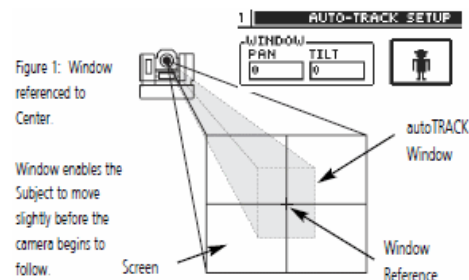
## Tracking Adjustments



Terms and Definitions:

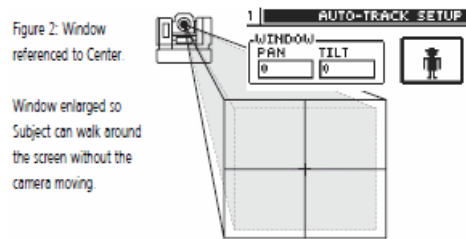
- An autoTRACK window (Figure 49) is an invisible area in which the subject can move without the camera following. If the person moves outside this defined area, the camera begins to follow them. This window is measured by the number of PAN and TILT degrees from the center of the window.

Figure 49. autoTRACK Window



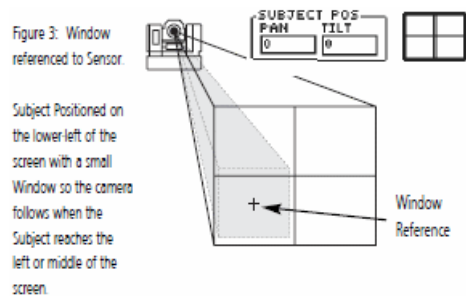
- The window reference (Figure 50) is based on the center of the Pan/Tilt window. It can be referenced to either:
  - Center Reference – the center of the screen.
  - Sensor Reference – the person wearing the Tracking Ring Sensor.

Figure 50. Window Reference



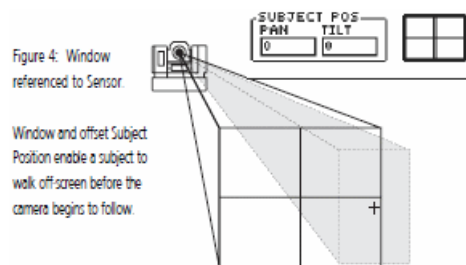
- The subject position (Figure 51) refers to the subject’s location as it appears on the screen. This distance is measured from the center of the screen. When the subject moves outside the Pan/Tilt window, the camera resumes tracking at the subject position offset.

Figure 51. Subject Position



- The screen (Figure 52) is the visible area on the monitor.

Figure 52. Screen Area



**Note** If the presenter walks off the screen before the camera begins following, either change the size of the window or decrease the offset of the subject position.

**Note** Zooming in and out impacts the subject position. Zooming in causes the subject to move toward the outer edge of the screen. Zooming out causes the subject to move toward the center of the screen.

## Parameter Adjustment Tips

While in autoTRACK mode, the joystick pan and tilt capabilities are disabled but focus, iris, and zoom functionalities are operational. The following tips can help keep the subject from moving off the screen while zooming in and out in autoTRACK mode.

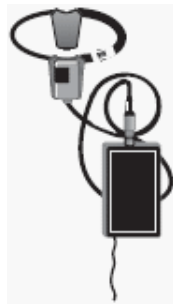
1. Determine the physical area (presentation space) the camera needs to cover.
2. Ask the subject to wear the Tracking Ring Package, power it up, and stand within the presentation space at the point closest to the camera.
3. Simultaneously press and hold ENTER and press the autoTRACK button on top of the joystick to enable the camera's autoTRACK functionality.
4. Zoom in on the subject.
5. Adjust the window, window reference, and subject position—then focus.
6. Ask the subject to walk around within the presentation area.
7. While the camera follows the subject automatically, zoom in and out to ensure that the subject remains on screen.

## Using autoTRACK

The JSC-2200 SHOT Director autoTRACK (Figure 53) technology, enables the camera to follow a subject around the room automatically.

**Note** For detailed information on autoTRACK, please refer to the Camera System Installation and Operation Manual.

Figure 53. autoTRACK Components



## Before entering autoTRACK mode

- Ensure that the Main Docking Station is properly installed and that the subject is wearing the Tracking Ring.
- Turn the Tracking Ring Power Pack ON.

## Entering autoTRACK mode

Simultaneously press the ENTER button on the JSC-2200 SHOT Director keypad and the autoTRACK button on top of the joystick. Refer to [Figure 54](#). This enables camera autoTRACK mode without changing the current zoom perspective.

Figure 54. Entering autoTRACK Buttons



# Troubleshooting

Refer to the following troubleshooting information for any problems with the JSC-2200 SHOT Director. For problems not covered or for specific questions, please contact your authorized reseller or call Customer Support.

**Problem:**

The JSC-2200 SHOT Director will not power up.

**Check that:**

- The power supply is plugged in.
- The power light is illuminated.
- The wall outlet is supplying the necessary voltage.
- The power supply is working and free of damage.

**Problem:**

The selected camera does not move or it moves sporadically when the Joystick is moved.

**Check that:**

- The proper CameraMan is selected.
- The desired CameraMan base unit address matches the JSC-2200 SHOT Director selection.

<b>Camera Base Unit</b>	<b>JSC-2200 SHOT Director Camera</b>
0	1
1	2
2	3
↓	↓

- autoTRACK off. If not, press the button on top of the joystick to disable autoTRACK and to enable joystick control of the camera's movement.
- Pan/tilt speed slider controls are not set at the bottom. If at the bottom, adjust the sliders upward.

- Soft stops are not set too close together.
- The joystick is calibrated. If not –
  - Turn Power OFF.
  - While holding down the SETUP button, power the JSC-2200 SHOT Director on.
  - Continue holding the SETUP button until the calibration screen appears.
  - Calibrate the JSC-2200 SHOT Director.
- DIP switch 8 on Switchbank B of the CameraMan base unit is enabled. If not, enable the DIP switch to use the keypad and the JSC-2200 SHOT Director.

Problem:

The JSC-2200 SHOT Director does not beep when setting a location preset or autoTRACK View.

Check that:

The Beep function in the Setup Director menu is turned ON. If not, go to SETUP>SHOT Director>MENU to enable it.

Problem:

JSC-2200 SHOT Director displays a \*COMMUNICATIONS ERROR\*

Check that:

The JSC-2200 SHOT Director is communicating properly with the selected camera –

- Check all the connection cables.
- Verify that the selected CameraMan is on your network.
- Verify that the CameraMan Dipswitch 7 on Switchbank A is UP (see the CameraMan operation manual for more details).
- Verify that the CameraMan ROM card revision # is correct. Refer to the CameraMan 3012 3e DIGITAL Camera Manual for details.
- Verify that the base unit address is set correctly.

Problem:

CameraMan will not autoTRACK. (autoTRACK version only).

Check that:

- autoTRACK is ON. If not, press and hold the ENTER button, then press the autoTRACK button on the top of the joystick.
- An autoTRACK view is selected. If not, press one of the autoTRACK view buttons on the keypad.
- The soft stops are not set too closely together.

Problem: Cannot change any camera settings or presets.

Check that:

The Lock function on the SETTINGS --> PAN/TILT UNIT Menu is not selected. If selected, clear the MEM LOCK checkbox by going to SETTINGS-->PAN/TILT UNIT.

Problem:

The camera allows talent to walk off-screen before it begins to follow talent.

Check that:

The Pan/Tilt Window size or Subject Position are properly adjusted. If not –

- Reset the Pan/Tilt Window Size and Subject Position to 0.
- Readjust the Pan/Tilt Window Size and Subject Position settings.
- Make the Pan/Tilt Window size smaller.
- Zoom out.
- The sensitivity is not too low.

Problem:

The camera moves faster in one direction than the other.

- Check that:  
The Joystick is calibrated. If not –
  - Turn Power OFF.
  - While holding down the SETUP button, power the JSC-2200 SHOT Director on.
  - Continue holding the SETUP button until the calibration screen appears.
  - Calibrate the JSC-2200 SHOT Director.





# Specifications

Following are a few key terms mentioned in this manual and the JSC-2200 SHOT Director specifications. For 3012 3e DIGITAL camera specifications, refer to the camera Installation and Operation Manual.

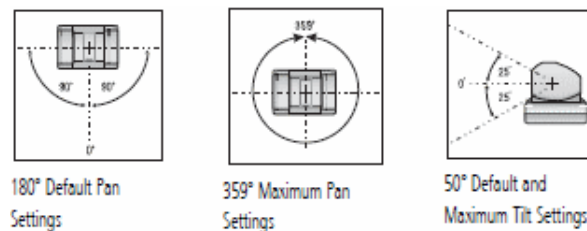
## Specifications

Display Type:	LCD, H: 1.5 in (3.81 cm) W: 3 in (7.62 cm), Adjustable Contrast and Backlight
Pan/Tilt control type:	Self-Centering joystick, software configured
Iris/Focus control type:	Rotary encoders
RS-485 Max Distance:	2,500 ft. (762.2 m)
Power:	100 - 240 V ac 50/60 Hz, 1 A
Dimensions:	L: 18 in (45.72 cm) H: 5.5 in (13.97 cm) D: 8.5 in (21.59 cm)
Weight:	4.5 lbs. (2.04 kg)
Temperature:	32° - 100° F (0°-37.78° C)
Humidity:	0-95% non-condensing

## Maximum Pan/Tilt Travel

The CameraMan camera has a maximum pan range of 359° and a maximum tilt range of 50°. It comes programmed with factory default settings of ± 90° of PAN (left and right) and ±25° of TILT. Refer to [Figure 55](#).

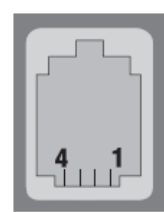
Figure 55. Pan/Tilt Defaults





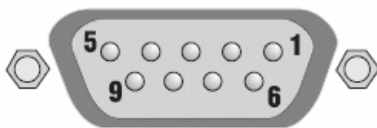
# Pinout Diagrams

The following pinout connections are on the back of the CameraMan JSC-2200 SHOT Director.



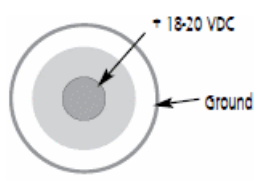
RS-485  
Four position  
Modular Handset

Pin	Signal
1	Ground
2	Signal A
3	Signal B
4	Ground



COM 1  
9-pin Female D-Sub

Pin	Signal
2	Transmit
3	Receive
5	Ground
1, 4, 6-9	Not Used



5.5mm DC Power  
Connector



# Default/Reset Settings

The CameraMan JSC-2200 SHOT Director adjusts various camera, autoTRACK, and location preset settings. Below are the factory default settings.

CameraMan Default Settings					
		Default Preset		Preset 2	
System Lock/Unlock	Unlocked	Pan Position	0	Pan Position	45°
Tracking	Off	Tilt Position	0°	Tilt Position	-10°
Pan Direction	Normal	Zoom Position	Wide	Zoom Position	Tight
Pan Soft Stops	+90° to -90°	Iris	Auto	Iris	Auto
Tilt Soft Stops	Cleared	Preset 1		Preset 3	
Preset Speed	100	Pan Position	0°	Pan Position	-45°
Gain	AGC	Tilt Position	0°	Tilt Position	10°
		Zoom Position	Wide	Zoom Position	Mid-range
		Iris	Auto	Iris	Auto

Note: All other position presets remain unchanged.

autoTRACK Default Settings: 3012 3e (1-CCD)					
Default Tracking View		Wide Tracking View		Left Tracking View	
Zoom Position	0	Zoom Position	130 (56)	Zoom Position	130 (56)
Iris Position	Auto	Iris Position	Auto	Iris Position	Auto
Pan Subject Position	0	Pan Subject Position	0	Pan Subject Position	1000 (2079)
Tilt Subject Position	0	Tilt Subject Position	0	Tilt Subject Position	-231
Pan autoTRACK™ Window	0°	Pan autoTRACK™ Window	4° (3°)	Pan autoTRACK™ Window	6° (3°)
Tilt autoTRACK™ Window	0°	Tilt autoTRACK™ Window	2°	Tilt autoTRACK™ Window	2°
Tracking Sensitivity	80	Tracking Sensitivity	100 (70)	Tracking Sensitivity	80 (70)
Tight Tracking View		Right Tracking View		Mid Tracking View	
Zoom Position	175 (156)	Zoom Position	130 (56)	Zoom Position	152 (106)
Iris Position	Auto	Iris Position	Auto	Iris Position	Auto
Pan Subject Position	0	Pan Subject Position	-1000 (-2079)	Pan Subject Position	0
Tilt Subject Position	0	Tilt Subject Position	-231	Tilt Subject Position	0
Pan autoTRACK™ Window	0° (3°)	Pan autoTRACK™ Window	6° (3°)	Pan autoTRACK™ Window	2°
Tilt autoTRACK™ Window	2°	Tilt autoTRACK™ Window	2°	Tilt autoTRACK™ Window	2°
Tracking Sensitivity	110 (70)	Tracking Sensitivity	80 (70)	Tracking Sensitivity	100 (70)

### Lock Mode

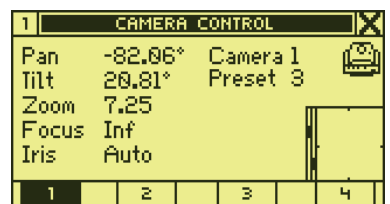
The following settings cannot be changed when the JSC-2200 SHOT Director is in LOCKED mode:

1. All SETUP options except for the LOCK option itself.
2. All MENU options (the MENU selection is inaccessible).
3. All POSITION PRESETS and TRACKING VIEWS.



# LCD Handling Precautions

Due to the delicate nature of the JSC-2200 SHOT Director LCD screen, please make note of the following handling precautions.



- An LCD screen is a fragile item and should not be subjected to strong mechanical shocks.
- Avoid applying pressure to the screen's surface. This distorts the glass and cause a change in color.
- In the event of LCD breakage and fluid leakage:
  - Do not inhale, ingest, or make skin contact with the fluid. If contact is made, rinse immediately.
  - Contact Customer Support for maintenance/replacement assistance.
- When cleaning the screen, use a soft, damp cloth with a mild solvent, such as Isopropyl or Ethyl alcohol. DO NOT use water, ketone, or aromatic.

